

IV. *Is it absolutely necessary to excise the head of the humerus when it has been broken by a ball?*

M. Baudens says, from his experience, the operation is *always requisite*. When this is not done, we learn that "one of three results are observed: 1, death from purulent infection; 2, the necessity for secondary excision; or, 3, the patient survives with ankylosis, or fistulous openings, in a state of suffering and peril, the issue of which is uncertain."

V. *Is immediate excision to be preferred to secondary excision?*

M. Baudens furnishes the following statistics:—

"In twenty-six cases, the head of the humerus was thus injured. In eleven, excision was *immediately* performed; ten recovered, one died; in fifteen, the operation was deferred in the hope that, because their wounds perhaps were less severe, they might recover without an operation. Of these fifteen, eight died of purulent infection; three underwent secondary excision (all of whom recovered), and four survived with fistulous openings.

"Hence, we see the success of three secondary excisions was dearly bought, since from not having operated at once, eight of the wounded died of purulent infection."

The remainder of the memoir is occupied with illustrative cases, which are of extreme interest, and which corroborate the principles laid down in the preceding pages.

57. *Dislocation of the Astragalus Backwards and Inwards*.—Prof. WILLIAMS communicated the following case of this accident:—

"Stephen Phillips, labourer, aged 54, of spare habit and sallow complexion, who has uniformly enjoyed good health, and lived well and temperately, was admitted into the City of Dublin Hospital on the 12th of April, 1852.

"He states that on the previous day he had been at work, along with some other men, beneath an overhanging bank of earth and gravel in the granite quarry at Kingstown, which they were undermining and removing in order to expose the granite strata underneath. At the time the accident occurred, the patient and another man were engaged shovelling the loose earth, as it was detached, into a truck or wagon, which was placed behind them on the "tram way." Whilst thus employed, another man ascended the bank, and without any warning to those below, struck a heavy iron bar, called a "clay bar," into its upper surface, when it suddenly gave way, and being precipitated over, struck the patient violently on the left side of the thorax (he was on the side of the wagon next the falling earth), he standing with his chest parallel with the front of the bank previous to its fall; but *when struck*, his body was partially rotated backwards and to the right side, as he was in the act of throwing a shovelful of earth into the wagon, which stood behind and to the right side of him. The force of the concussion threw him violently backwards across the roadway. The remainder of the earth fell over the lower part of his body, fixing his feet and legs to the ground. Though very much hurt, he says he was not at all confused, and describes the accident as having taken place exactly as above stated. He also says that he does not think the mere weight of the falling earth was sufficient to produce the injuries received, as he was easily able to withdraw the injured limb without assistance; the right leg having been more heavily covered, had to be dug out before he could be completely extricated. He says he suffered acute pain in the left ankle from the moment of the accident, and it soon became swollen, and he also had severe pain in the left side of the chest. He was carried to a house in the neighbourhood, and the next day was admitted to the City of Dublin Hospital under the care of Dr. Williams.

"He complained of pain and a stitch on taking a full inspiration in the left side of the chest, and on examination the fifth and sixth ribs of the left side

require amputation, in the first instance, according to M. Baudens' rule, it should have been performed just above the seat of fracture, and in that case, secondary amputation would have been required for the subsequent disorganization of the knee-joint. The case alluded to was treated in the Richmond Hospital by Dr. Hutton.—*Tr.*

were found to be fractured about their centres. The left ankle-joint presents some curious and unusual appearances. The anterior relations of the tibia are very little disturbed, the anterior aspect of the foot being free from deformity, except indeed a nearly imperceptible shortening of the foot, which is a little everted. He has free motion of his toes and some slight motion of the ankle-joint. Motion of the latter increases the pain, which is of a "burning" character. There is no fracture of either the tibia or the fibula, and there is some swelling and ecchymosis, with a hard tumour of an irregularly convex shape, lying between the inferior extremity of the tibia, the tendo-Achillis, and os calcis. Professor Williams came to the conclusion that this tumour was formed by the astragalus, which was dislocated backwards and inwards, and also so rotated on its antero-posterior axis that its superior articulating surface looked almost directly inwards. A slight attempt was made to replace the bone, but was speedily abandoned, both because of the impediment to reduction presented by the above-mentioned rotation, and of the risk of further injury to the swollen and ecchymosed soft parts covering the astragalus. The limb was then placed on a double inclined plane, so arranged that the leg lay horizontally. Leeches were applied to the joint, and subsequently cold water irrigation."

Professor Williams said he would not detain the Society by reading the details of the progress of the case, which had been fully and accurately taken by Mr. Taylor. It would be enough to say that the soft parts covering the displaced bone inflamed, and on the eighth day, when it was evident that their destruction was inevitable, they were divided by a crucial incision, which gave exit to a little sanious discharge, and exposed the bone with its superior articular surface looking inwards. On the fourteenth day the bone was removed (some strong ligamentous attachments, which still held it, being divided with a probe-pointed bistoury guided by the forefinger), and it was then found that the astragalus had been fractured as well as dislocated, its head and a portion of the inferior surface having been broken, or rather *ground off*, and a quantity of the resulting small fragments were removed. The limb was then replaced in its previous position. Nothing requiring to be particularly noticed occurred until a fortnight after the removal of the bone, when an abscess formed below and behind the external malleolus, and was opened. The discharge both from this abscess and from the cavity from which the astragalus had been removed, now rapidly diminished, and the parts presented a very healthy appearance. Matters went on favourably till about 6th of May, when some trouble was occasioned by stripping of the integuments over the sacrum and os calcis, in spite of every precaution that had been taken to guard against both. This, however, was remedied by attention to position, and on the 7th of June the limb was replaced in its original posture. From this time he went on steadily, but very slowly, improving; and on the 10th of August the cavity whence the bone had been removed had cicatrized, leaving a deep depression.

The foot was in an exceedingly slight degree extended, but not permanently so, for he possessed some power of moving the ankle and was able to bring the foot to a right angle with the leg. He now began to move about on crutches, and at first the foot, when allowed to depend for some time, became painful and oedematous, but that inconvenience was relieved by careful bandaging, and soon ceased. Towards the latter end of August he left the hospital to go to the country, and was then able to walk pretty well with the aid of a stick.

Nothing was seen or heard of the patient until ten months after he had left the hospital, when he returned and stated that he had resumed work, though not of so laborious a kind as before, but that the extension of the foot had gradually increased, so as to cause considerable inconvenience in walking. The tendo-Achillis was now divided subcutaneously, and the foot was brought to about the same position it had been in when he first left the hospital. He was then provided with a high-heeled shoe, and left the hospital considerably improved, but using the help of a stick in walking.

Professor Williams said he was chiefly induced to bring this case before the Society, because it was rather curious so little attention has been directed to dislocation of the astragalus backward; in fact, it has been scarcely noticed by systematic writers on surgery. Benjamin Bell, indeed, says that the astragalus

may be displaced backwards, but he apparently does so wholly on theoretical grounds, and merely as contemplating the possibility of the occurrence; but Professor Williams could not then remember any other systematic writers who alluded to the subject, except Mr. Lizars and Mr. Liston, who have each very briefly mentioned a case that occurred in their own practice respectively, and Mr. Liston observes that he never expected to see another. On the other hand, this dislocation was not noticed by Miller, Fergusson, Bransby Cooper, Skey, Pirrie, or Erichsen, and it had even escaped the great experience and research of Mr. South. The French systematic writers were quite silent on the subject. MM. Vidal de Cassis and Nelaton, for example, the most recent of them, say nothing about it; and yet it was scarcely necessary to say before that Society, that there are several cases of dislocation of the astragalus on record. The accident, however, was undoubtedly a rare one, as only six cases of it, he believed, had hitherto been published; and the fact that so few cases of the kind had yet been recorded had chiefly induced him to bring before the Society the present case, which would make the published examples of dislocation of the astragalus backwards amount to seven in number. There were, however, one or two points respecting which he would say a few words.

The six cases already known are collected by Mr. Turner in his valuable monograph on "Dislocations of the Astragalus" (together with a case inadvertently quoted from Boyer as an example of that accident); and in two of those cases (Mr. Phillips') the bone appears to have been thrown directly backwards, as it is stated that in one the tendo-Achillis was forced back by the bone, so as to form an angle of 45 degrees, and that the appearance in the second case was exactly similar. In one case (Mr. Turner's) the displacement was backwards, outwards, and downwards; and in three (those of Mr. Lizars, Mr. Liston, and one recorded in the *Lancet*, that was admitted to University College Hospital), the astragalus was dislocated backwards and inwards. In the case read that evening, the displacement was also in the latter direction, so that in four of the seven cases now known, the astragalus has been backwards and inwards.

In only one of these seven cases (that recorded in the *Lancet*) was either the tibia or the fibula fractured; and in that case both those bones were broken at the level of the ankle-joint. This case is also the only one of the seven in which reduction was effected; and as Mr. Turner observes, the existence of fracture of the bones of the leg no doubt facilitated the reduction.

In one case (Mr. Turner's) the bone was removed, the dislocation having been compound, complete, and irreducible; and in four (Messrs. Phillips, Lizars, and Liston's) reduction being impossible, the bone was left in its new situation; in all these cases the patients did well, and had ultimately a useful limb, without death of the bone, suppuration, ulceration, or sloughing of the integuments. In the case read that night the result was different, as had appeared from the report of the case. This, then, was the first case of dislocation of the astragalus backwards, in which the soft parts inflamed, and sloughed, and exposed the bone.

It is stated in Mr. Taylor's notes of the case that the attempts made to reduce the bone were not forcible, and were soon abandoned. The reasons for not making much or persevering effort at reduction were (Professor Williams said), that as soon as he had satisfied himself the bone had sustained about a quarter of a complete revolution inwards on its antero-posterior axis, so that its superior articulating surface looked directly inwards, he saw little prospect of effecting reduction, inasmuch as that deviation could scarcely be rectified by any force that could have been brought to bear on the bone, and even if it were practicable, it could not have been effected without inflicting an unjustifiable amount of injury upon the soft parts covering the bone; the attempt at reduction, therefore, was very slight; so slight, indeed, as scarcely to be called an attempt at reduction; and, moreover, the history of previous cases of the accident tended to show that, on the one hand, there was little hope of replacing the astragalus when the tibia and fibula were unbroken; and on the other, that in every instance in which the bone had been left in its new situation the issue had been satisfactory. As to the rotation of the astragalus, that bone could be rotated either on its antero-posterior or transverse axis. In Mr. Liston's case,

the astragalus was rotated in the latter direction; and in Mr. Turner's it was rotated on its antero-posterior axis outwards, the superior articular surface presenting at the wound. In the case just read the bone had made a quarter of a revolution inwards, Professor Williams said he need not dwell upon the mechanism of the various rotations of the astragalus in dislocation; for whether the rotation was partial or complete; whether on the antero-posterior or transverse axis; or whether it occurred in dislocation forwards or backwards, the mode of its production was analogous in each case, and explicable on the same principles. But the recognition of the existence of such a rotation was of great importance, for when it existed to any considerable extent, Professor Williams thought it rendered reduction impracticable. Now, the outlines of the astragalus are so well marked and recognizable by the touch, and the exact position was so clearly made out in this case of dislocation *backwards*, where the soft parts covering the displaced bone are so much thicker than in dislocation forwards, that he could not but think the existence and extent or non-existence of rotation could be easily determined, at all events in most cases, and especially in anterior dislocation; and thus an important guide as to the treatment to be adopted would be obtained.

The notes of the case were illustrated by a cast, showing the appearance of the ankle and foot on the day the patient was admitted into the hospital, and by a drawing and coloured wax cast, taken by Dr. Alexander Carte, exhibiting the position of the astragalus, and the condition of the surrounding soft parts on the day the astragalus was removed.

Mr. Tufnell has in his possession a cast of the patient's foot in his present condition, and perhaps he would have no objection to exhibit it to the Society at their next meeting.

Mr. TUFNELL.—I will be able, I think, to do more than that, for I may possibly be able to bring you the man himself. I met him the other day in the street when he was walking with one stick; he formerly required two, but latterly he said he had discontinued one of them. I asked him whether he was able to carry a basket on his arm and to work for his living, and he replied that he could not. Now, this is an important point to bear in mind.

Professor WILLIAMS.—I have no hesitation in saying that on several points the treatment of dislocation of the astragalus requires to be very carefully reviewed, and that Mr. Turner's statistics are not sufficiently extended to justify some of the conclusions which have been drawn from them. I have myself collected a considerable number of cases in addition to those that are reported in his work, and I hope on some future occasion to bring the subject at greater length under the notice of this Society. As regards the question of leaving the bone *in situ*, this much is to be said, that if authority deserves to have any weight, we have in favour of doing so the great names of Sir Astley Cooper, Dupuytren, and other surgeons of eminence, who did so even in some cases where it was anticipated that the parts covering the bone were likely to slough. —*Dublin Medical Press*, April 4, 1855.

OPHTHALMOLOGY.

58. *Protrusion of the Eyeballs, with Enlargement of the Thyroid Gland and Anæmic Palpitation.* By JAMES BEGGIE, M. D.—J. K., aged 32, by occupation a gentleman's servant, many years ago had a fall from horseback, by which he sustained a severe wound on the occiput, from which a profuse and continued hemorrhage took place. He has never been quite well since that occurrence. In the beginning of 1845, he suffered from bilious fever, and made a slow and imperfect recovery. In August, 1851, had an attack of jaundice, which continued more or less for a whole year; and during its progress the symptoms which first attracted attention in connection with the present history developed themselves. For more than a twelvemonth he has been subject to palpitation, breathlessness,